CLAIMS:

1. A method for detecting an aberrant cell or a predisposition to the development of an aberrant cell in a subject or in a biological sample from said subject, said method comprising contacting cells or cell extracts from said subject or said biological sample with an immunointeractive molecule specific for LM04 or antigenic portion thereof and screening for the level of immunointeractive molecule-LM04 complex formation wherein an elevated presence of said complex relative to a normal cell is indicative of an aberrant cell.

2. A method for detecting an aberrant cell or the predisposition to the development of an aberrant cell in a subject or in a biological sample from said subject, said method comprising screening the level of a transcription product of a gene encoding LM04 wherein an elevated level of said expression product compared to the level of a normal cell is indicative of an aberrant cell.

3. A method for diagnosing the presence of an aberrant cell growth or the predisposition to the development of an aberrant cell growth in a subject, said method comprising contacting cells or cell extracts from said subject or a biological sample from said subject with a LM04-binding effective amount of an antibody having specificity for said LM04 or an antigenic determinant or epitope therein and then quantitatively or qualitatively determining the level of a LM04-antibody complex wherein the presence of elevated levels of said complex compared to a normal cell is indicative of the presence of an aberrant growth.

4. A method for diagnosing the presence of an aberrant cell growth or the predisposition to the development of an aberrant cell growth in a subject, said method comprising obtaining mRNA from cells of said subject or from a biological sample from said subject and optionally generating cDNA and contacting said mRNA or cDNA with a genetic probe capable of hybridizing to and/or amplifying all or part of a nucleotide sequence encoding LM04 or its complementary nucleotide sequence and then detecting the level of said mRNA or cDNA wherein the presence of elevated levels of said mRNA or cDNA compared to normal cells is

indicative of the presence of an aberrant growth.

5. The method according to any one of claims 1-4 wherein said aberrant cell is a neoplastic cell.

6. The method according to claim 5 wherein said neoplastic cell is one which characterizes central nervous system tumors, retinoblastoma, head and neck cancers, lung cancer, kidney cancers, pancreatic neoplasias, colorectal cancer, cervical cancer, testicular cancer, ovarian cancer, lymphoma, leukemia, malignant melanoma, neuroendocrine tumors and carcinoid tumors.

7. The method according to claim 5 wherein said neoplastic cell is a squamous cell, renal cell, islet cell, germ cell, mammary cell or epithelial cell.

8. The method according to claim 7 wherein said neoplastic cell is a mammary cell.

9. The method according to claim 7 wherein said neoplastic cell is an epithelial cell.

10. An isolated immunointeractive molecule or derivative, analogue or mutant thereof wherein the immunointeractive molecule interacts with LM04 or *LM04*.

11. The immunointeractive molecule of claim 10 wherein said immunointeractive molecule is an antibody.

12. A deimmunized antibody molecule having specificity for an epitope recognized by a monoclonal antibody to LM04 wherein at least one of the CDRs of the variable domain of said deimmunized antibody is derived from the said monoclonal antibody to LM04 and the remaining immunoglobulin-derived parts of the deimmunized antibody molecule are derived from an immunoglobulin or an analogue thereof from the host for which the antibody is to be deimmunized.

13. The antibody of claim 11 wherein said antibody is a monoclonal antibody.

14. The monoclonal antibody of claim 13 wherein said monoclonal antibody is secreted by hybridoma 16H2 or mutant or variant thereof.

15. The monoclonal antibody of claim 13 wherein said monoclonal antibody is secreted by hybridoma 20F8 or mutant or variant thereof.

16. The hybridoma cell line 16H2 or mutant or variant thereof.

17. The hybridoma cell line 20F8 or mutant or variant thereof.

18. The method according to claim 1 or 3 wherein said immunointeractive molecule is selected from:

(i) an isolated immunointeractive molecule or derivative, analogue or mutant thereof wherein the immunointeractive molecule interacts with LM04 or *LM04*;

(ii) an isolated antibody wherein said antibody interacts with LM04 or *LM04*;

(iii) A deimmunized antibody molecule having specificity for an epitope recognized by a monoclonal antibody to LM04 wherein at least one of the CDRs of the variable domain of said deimmunized antibody is derived from the said monoclonal antibody to LM04 and the remaining immunoglobulin-derived parts of the deimmunized antibody molecule are derived from an immunoglobulin or an analogue thereof from the host for which the antibody is to be deimmunized;

(iv) An isolated monoclonal antibody wherein said antibody interacts with LM04 or *LM04*;

(v) The monoclonal antibody secreted by hybridoma 16H2 or mutant or variant thereof;

(vi) The monoclonal antibody secreted by hybridoma 20F8 or mutant or variant thereof.

19. An assay to detect LM04 including the stems of:-

(i) contacting a monoclonal antibody specific to LM04 or an antigenic determinant thereof with a biological sample suspected of containing a cell containing said LM04; and

(ii) subjecting the complex formed in step (1) to a signal detection step.

20. The method according to claim 19 wherein said antibody is selected from:

(i) An isolated monoclonal antibody wherein said antibody interacts with LM04 or *LM04*;

(ii) The monoclonal antibody secreted by hybridoma 16H2 or mutant or variant thereof;

(iii) The monoclonal antibody secreted by hybridoma 20F8 or mutant or variant thereof.

21. A method for detecting neoplastic cells in a human patient, said method comprising introducing into said patient a deimmunized form of a non-human derived monoclonal antibody according to claim 12 labelled with a reporter molecule, allowing dissemination of the labelled antibody throughout the circulatory system, or to selected parts of the circulatory system and then subjecting said patient to reporter molecule-detection means to identify the location of the antibody.

22. A method of detecting, in a sample, LM04 or fragment, variant or derivative thereof comprising contacting the sample with an antibody or fragment or derivative thereof and detecting the level of a complex comprising said antibody and LM04 or fragment, variant or derivative thereof compared to normal controls

wherein elevated levels of LM04 is indicative of cancer growth.

23. The method according to claim 22 wherein said antibody is selected from:

(i) an isolated antibody wherein said antibody interacts with LM04 or *LM04*;

(ii) A deimmunized antibody molecule having specificity for an epitope recognized by a monoclonal antibody to LM04 wherein at least one of the CDRs of the variable domain of said deimmunized antibody is derived from the said monoclonal antibody to LM04 and the remaining immunoglobulin-derived parts of the deimmunized antibody molecule are derived from an immunoglobulin or an analogue thereof from the host for which the antibody is to be deimmunized;

(iii) An isolated monoclonal antibody wherein said antibody interacts with LM04 or *LM04*;

(iv) The monoclonal antibody secreted by hybridoma 16H2 or mutant or variant thereof;

(v) The monoclonal antibody secreted by hybridoma 20F8 or mutant or variant thereof.

24. A method of monitoring for the onset or progression of an aberrant cell growth in a subject, said method comprising screening for the level of LM04 or a transcription product of a gene encoding LM04 in a biological sample from said subject wherein an elevated level of said LM04 or transcription product compared to the levels of a normal cell is indicative of aberrant cell growth.

25. The method according to claim 24 wherein said aberrant cell is a neoplastic cell.

26. The method according to claim 25 wherein said neoplastic cell is one which characterizes central nervous system tumors, retinoblastoma, head and neck

cancers, lung cancer, kidney cancers, pancreatic neoplasias, colorectal cancer, cervical cancer, testicular cancer, ovarian cancer, lymphoma, leukemia, malignant melanoma, neuroendocrine tumors and carcinoid tumors.

27. The method according to claim 25 wherein said neoplastic cell is a squamous cell, renal cell, islet cell, germ cell, mammary cell or epithelial cell.

28. The method according to claim 27 wherein said neoplastic cell is a mammary cell.

29. The method according to claim 27 wherein said neoplastic cell is an epithelial cell.

30. A method of modulating LM04 regulated cellular proliferation, said method comprising contacting said cell with an effective amount of an agent for a time and under conditions sufficient to modulate *LM04* expression or LM04 functional activity wherein inhibiting or otherwise antagonising said expression or activity down-regulates said cellular proliferation.

31. A method for the treatment and/or prophylaxis of a conditions characterised by aberrant, unwanted or otherwise inappropriate LM04-regulated proliferative cellular activity in a mammal, said method comprising administering to said mammal an effective amount of an agent for a time and under conditions sufficient to modulate *LM04* expression or LM04 functional activity wherein inhibiting or otherwise antagonising said expression or activity down-regulates said cellular proliferation.

32. The method according to any one of claims 30 or 31 wherein said cell is a neoplastic cell.

33. The method according to claim 32 wherein said neoplastic cell is one which characterizes central nervous system tumors, retinoblastoma, head and neck cancers, lung cancer, kidney cancers, pancreatic neoplasias, colorectal cancer, cervical cancer, testicular cancer, ovarian cancer, lymphoma, leukemia, malignant melanoma, neuroendocrine tumors and carcinoid tumors.

34. The method according to claim 32 wherein said neoplastic cell is a squamous cell, renal cell, islet cell, germ cell, mammary cell or epithelial cell.

35. The method according to claim 34 wherein said neoplastic cell is a mammary cell.

36. The method according to claim 34 wherein said neoplastic cell is an epithelial cell.

37. A method for detecting an agent capable of modulating *LM04* expression or LM04 functional activity said method comprising contacting a cell or extract thereof containing said *LM04* or LM04 with a putative agent and detecting an altered expression phenotype associated with said interaction.

38. An agent identified in accordance with claim 37.

39. A pharmaceutical composition comprising a modulatory agent identified in accordance with claim 37 together with one or more pharmaceutically acceptable carrier and/or diluents.